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Effect of planting density, irrigation and fertigation levels on water saving and water use efficiency of brinjal (*Solanum melongena* L.)

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ABSTRACT : A field experiment was conducted during *Rabi-hot* weather of 2009-2010 at Department of Agronomy, College of Agriculture, Dapoli, Dist. Ratnagiri (M.S.). The soil of experimental field was sandy clay loam in texture and moderately acidic in reaction, medium in available N, low in available P_2O_5 and high in K_2O content. The experiment was laid out in Split Plot Design consisted of three planting density *viz.*, S_1-75×75cm, S_2-75-50×90cm, S_3-175-50×50cm and three irrigation levels (I_1-100 % ET_{crop}, I_2-80 % ET_{crop}, I_3-60 % ET_{crop}). The sub plot treatment comprised of two fertigation levels *viz.*, F_1-100 per cent RDF through drip (WSF), F_2-80 per cent RDF through drip (WSF). Thus, these eighteen treatments combinations were replicated thrice. Field water use efficiency (FWUE) was maximum *i.e.* 46.91 q ha^{-1}-cm in treatment combination of plant spacing S_3 (175-50×50cm) with I_3 (60 % ET_{crop}) and F_1 (100 % RDF through drip). The treatment wise saving of water over check basin irrigation method was 66.94, 78.47, and 88.94 per cent in the treatments I_1 (100 % ET_{crop}), I_2 (80 % ET_{crop}) and I_3 (60 % ET_{crop}), respectively.

Key **W**ords : Water saving, Field water use efficiency (FWUE), Planting density, Irrigation levels, Fertigation levels, Brinjal

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